

CLAIMS

What is claimed is:

1. A circuit for connection to a backplane connector interfacing with a bus, where the bus may carry a diffsense signal, and where the circuit may connect to a voltage

5 source comprising:

a comparator, comprising a comparator output configured as an open collector;  
a pullup resistor having two terminals, where one said terminal is connected to  
said comparator output and the other said terminal is connected to the  
voltage source; and

10 a programmable logic device having an interface, said interface electrically  
connected to said terminal of said pullup resistor connected to said  
comparator output, whereby a diffsense prime signal is generated by  
the combination of said comparator output and said programmable  
logic device interface.

15

2. The circuit of claim 1, wherein said comparator comprises:

a noninverting input connected to the backplane connector, wherein the  
diffsense signal is applied to said noninverting input;  
an inverting input, wherein a substantially fixed voltage is applied to said  
inverting input; and  
20 a switchable connection to ground.

20

3. The circuit of claim 1, wherein said programmable logic device comprises:

a tri-state buffer having an input, an output and a control terminal, wherein  
said output of said buffer is connected to said interface and said input  
is connected to ground; and  
transceiver disable logic connected to said control terminal of said tri-state  
buffer.

4. The circuit of claim 3, further comprising at least one conductor electrically  
connected to said transceiver disable logic, whereby at least one signal can be  
transmitted to said transceiver disable logic.

5. The circuit of claim 3, further comprising:

an input element connected to said output of said tri-state buffer; and  
expander enable logic electrically connected to said input element.

6. The circuit of claim 5, further comprising an expander, wherein said expander  
enable logic is electrically connected to said expander.

7. The circuit of claim 1, wherein said voltage source is at logic high voltage.

8. The circuit of claim 7, wherein said voltage source is substantially at five volts.

9. The circuit of claim 1, further comprising a voltage divider connected to said inverting input of said comparator, wherein said voltage divider applies said substantially fixed voltage to said inverting input.

5 10. The circuit of claim 1, wherein said substantially fixed voltage applied to said inverting input of said comparator is substantially 2.4 volts.

11. The circuit of claim 1, further comprising a transceiver electrically connected to said interface of said programmable logic device and to said terminal of said pullup  
10 resistor connected to said comparator output.

12. A bus controller card for use with a backplane having a bus controller slot connected to a bus, comprising:

15 a backplane connector, wherein said backplane connector is detachably connected to said bus controller slot;  
a controller electrically connected to said backplane connector, said controller comprising  
a comparator, comprising  
a noninverting input connected to the backplane connector,  
20 wherein the diffsense signal is applied to said noninverting input,  
an inverting input, wherein a substantially fixed voltage is applied to said inverting input, and  
a comparator output configured as an open collector;

a pullup resistor having two terminals, where one said terminal is  
connected to said comparator output and the other said terminal  
is connected to the voltage source; and

a programmable logic device comprising

5 an interface electrically connected to said terminal of said  
pullup resistor connected to said comparator output,  
a tri-state buffer having an input, an output and a control  
terminal, wherein said output of said buffer is connected to said  
interface and said input is connected to ground,  
10 transceiver disable logic connected to said control terminal of  
said tri-state buffer,  
an input element connected to said output of said tri-state  
buffer, and  
expander enable logic electrically connected to said input  
15 element;

an expander electrically connected to said expander enable logic; and

a high voltage differential transceiver electrically connected to said interface of  
said programmable logic device and to said terminal of said pullup  
resistor connected to said comparator output, whereby a diffsense  
20 prime signal is generated by the combination of said comparator output  
and said programmable logic device interface.

13. A method for controlling a device connected to a bus, comprising:

checking for a diffsense signal from the bus;

comparing the diffsense signal to a reference voltage;

generating a diffsense prime signal based on said comparing; and

5 selectively modifying said generated diffsense prime signal.

14. The method of claim 13, further comprising:

transmitting said selectively modified diffsense prime signal to the device; and

switching the device in response to said selectively modified diffsense prime

10 signal.

15. The method of claim 14, wherein said selectively modifying comprises asserting  
said diffsense prime signal low, and wherein said switching comprises switching the  
device off.

15